

Fig. 11 is a view showing another electronic camera of the invention connected to a television.

Fig. 12 is a block diagram of a known electronic camera.

5 Fig. 13 is a view showing an appearance of the electronic camera of Fig. 12, from the rear, and an example of the display on a display unit.

DETAILED DESCRIPTION OF THE INVENTION

AI 10 Fig. 1 is a block diagram of a first embodiment of the invention.

The image processing apparatus of Fig. 1 comprises operation picture producing means 10 for producing an operation picture including indicia corresponding to a plurality of image processing functions that can be selected by an external operation; display means 12 for displaying the operation picture; position input means 14 placed over a screen of the display means 12, for detecting a touch operation as the external operation, and entering a position designated by the touch operation as an absolute position on the operation picture displayed on the display means; processing identifying means 16 for identifying a corresponding image processing function from the plurality of image processing functions, based on the position on the operation picture that is entered through the position input means 14; and image processing means 18 for carrying out the image processing function identified by the processing

for designating a relative position on the operation picture displayed on the external display device.

Fig. 3 is a block diagram of a third embodiment of an image processing apparatus according to the invention.

5 In the image processing apparatus as shown in Fig. 3, the apparatus of Fig. 1 is additionally provided with remote input means 24 for allowing the external operation also to be performed by a remote operation, so as to enter the position designated by the remote operation as a relative position on
10 the operation picture displayed on the external display device. The processing identifying means 16 identifies a corresponding image processing from the plurality of image processing functions, based on the position on the operation picture that is entered through the remote input means 24.

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15 The remote input means 24 permits the external operation, for entering a position on the operation image displayed on the external display device as a relative position, to be performed by a remote operation.

Since a remote controller capable of designating the
20 relative position may be used for selecting desired image processing, the selection can be accomplished at a reduced cost compared to a case where a remote controller provided with individual operating parts corresponding to respective image processing functions is used.

25 It is preferred that when remote operation capability is provided, the apparatus be constructed to allow the external operation to be performed as a touch operation or

as a remote operation at the operator's discretion, as in the present embodiment. However, the remote operation capability may be provided without the touch operation capability.

5 Fig. 4 is a block diagram of a fourth embodiment of an image processing apparatus according to the invention.

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10 In the image processing apparatus as shown in Fig. 4, the apparatus of Fig. 1, Fig. 2, or Fig. 3 is further provided with image adding means 26 for adding a cursor, indicating the position entered through the position input means 14 or the remote input means 24, to the operation picture produced by the operation picture producing means 10 and supplied to the output means 20.

15 The image adding means 26 adds a cursor indicating the position entered through the position input means 14 or remote input means 24 to the operation picture produced by the operation picture producing means 10 and transmitted to the output means 20. Thus, the cursor as well as the operation picture is displayed on the external display device, so that
20 the operator can surely recognize the relative position on the operation picture corresponding to the position entered by the operator, and quickly select desired image processing.

25 Several illustrative implementations of the invention in which the image processing apparatus is constituted by an electronic camera are described below.

Fig. 5 is a block diagram of an electronic camera implementing the principles of the invention according to Figs. 1, 2, and 4.

In Fig. 5, a control unit 30 is connected, through a control bus 52, to a position detecting unit 32, an output unit 34, a cursor processing unit 36, an image pickup unit 54, a recording and reproducing unit 56, a video display processing unit 58, an editing unit 60, an overlay processing unit 62, a frame memory 64 for an operation picture, a display unit 66, and a touch screen 68.

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The data output of the image pickup unit 54 is connected to the data inputs of the recording and producing unit 56 and video display processing unit 58. The data output of the recording and reproducing unit 56 is connected to the data input of the editing unit 60, and the data outputs of the video display processing unit 58 and frame memory 64 for the operation picture are connected to the data input of the overlay processing unit 62. The data output of the overlay processing unit 62 is connected to the data inputs of the display unit 66 and cursor processing unit 36, and the data output of the cursor processing unit 36 is connected to the data input of the output unit 34.

In Fig. 5, the same reference numerals as used in the block diagram of Fig. 12 are used for identifying functionally corresponding elements, of which no further explanation will be provided herein.

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DETAILED DESCRIPTION OF THE INVENTION

10 Fig. 1 is a block diagram of a first embodiment of the invention.

The image processing apparatus of Fig. 1 comprises operation picture producing means 10 for producing an operation picture including indicia corresponding to a
15 plurality of image processing functions that can be selected by an external operation; display means 12 for displaying the operation picture; position input means 14 placed over a screen of the display means 12, for detecting a touch operation as the external operation, and entering a position
20 designated by the touch operation as an absolute position on the operation picture displayed on the display means; processing identifying means 16 for identifying a corresponding image processing function from the plurality of image processing functions, based on the position on the
25 operation picture that is entered through the position input means 14; and image processing means 18 for carrying out the image processing function identified by the ^{processing} [position]

for designating a relative position on the operation picture displayed on the external display device.

Fig. 3 is a block diagram of a third embodiment of an image processing apparatus according to the invention.

5 In the image processing apparatus as shown in Fig. 3, the apparatus of Fig. 1 is additionally provided with remote input means²⁴ for allowing the external operation also to be performed by a remote operation, so as to enter the position designated by the remote operation as a relative position on
10 the operation picture displayed on the external display device. The process^{ing} identifying means 16 identifies a corresponding image processing from the plurality of image processing functions, based on the position on the operation picture that is entered through the remote input means 24.

15 The remote input means 24 permits the external operation, for entering a position on the operation image displayed on the external display device as a relative position, to be performed by a remote operation.

Since a remote controller capable of designating the
20 relative position may be used for selecting desired image processing, the selection can be accomplished at a reduced cost compared to a case where a remote controller provided with individual operating parts corresponding to respective image processing functions is used.

25 It is preferred that when remote operation capability is provided, the apparatus be constructed to allow the external operation to be performed as a touch operation or

as a remote operation at the operator's discretion, as in the present embodiment. However, the remote operation capability may be provided without the touch operation capability.

5 Fig. 4 is a block diagram of a fourth embodiment of an image processing apparatus according to the invention.

In the image processing apparatus as shown in Fig. 4, the apparatus of Fig. 1, Fig. 2, or Fig. 3 is further provided with image adding means 26 for adding a cursor,
10 indicating the position entered through the position input means 14 or the remote input means 24, to the operation picture produced by the operation picture producing means 10 and supplied to the output means 20.

The image adding means 26 adds a cursor indicating the
15 position entered ^{through} [by] the position input means [13]¹⁴ or remote input means 24 to the operation picture produced by the operation picture producing means 10 and transmitted to the output means 20. Thus, the cursor as well as the operation picture is displayed on the external display device, so that
20 the operator can surely recognize the relative position on the operation picture corresponding to the position entered by the operator, and quickly select desired image processing.

Several illustrative implementations of the invention
25 in which the image processing apparatus is constituted by an electronic camera are described below.

Fig. 5 is a block ^{diagram} of an electronic camera implementing the principles of the invention according to Figs. 1, 2, and 4. ✓

In Fig. 5, a control unit 30 is connected, through a control bus 52, to a position detecting unit 32, an output unit 34, a cursor processing unit 36, an image pickup unit 54, a recording and reproducing unit 56, a video display processing unit 58, an editing unit 60, an overlay processing unit 62, a frame memory 64 for an operation picture, a display unit 66, and a touch screen 68.

The data output of the image pickup unit 54 is connected to the data inputs of the recording and producing unit 56 and video display processing unit 58. The data output of the recording and reproducing unit 56 is connected to the data input of the editing unit 60, and the data outputs of the video display processing unit 58 and frame memory 64 for the operation picture are connected to the data input of the overlay processing unit 62. The data output of the overlay processing unit 62 is connected to the data inputs of the display unit 66 and cursor processing unit 36, and the data output of the cursor processing unit 36 is connected to the data input of the output unit 34.

In Fig. 5, the same reference numerals as used in the block diagram of Fig. 12 are used for identifying functionally corresponding elements, of which no further explanation will be provided herein.